

I. AMENDMENT

In the Claims:

The following listing of claims will replace all prior versions and listings of the claims in the application:

Listing of the Claims:

1. (Currently amended) A process for ~~increasing the circulating levels of treating a hormone in the blood stream of an immunocompetent animal~~human with a hormone deficiency which comprises delivering a viral vector *in vivo* to muscle cells of said ~~animal~~human by intramuscular injection in an amount sufficient to obtain expression of and increase the circulating level of said hormone in the bloodstream of said ~~animal~~human for a period greater than about 30 days, wherein said hormone undergoes secretion, diffusion or transport to the circulation upon expression *in vivo*.
- 2-3. (Canceled)
4. (Original) The process of claim 1 wherein the viral vector is a replication-defective adenoviral vector or a retroviral vector.
5. (Withdrawn) The process of claim 1 wherein the hormone is a cytokine, colony stimulating factor, nerve growth factor, insulin, glucagon, rennin, parathyroid hormone, growth hormone, or erythropoietin.
6. (Previously Presented) The process of claim 1 wherein the circulating level of the hormone is increased for a period of time greater than about 60 days.

7. (Previously Presented) The process of claim 1 wherein the circulating level of the hormone is increased for a period of time greater than about 90 days.

8. (Previously Presented) The process of claim 1 wherein the circulating level of the hormone is increased for a period of time greater than about 120 days.

9. (Previously Presented) The process of claim 1 wherein the circulating level of the hormone is increased for a period of time ranging from about 90 days to about 365 days.

10. (Original) The process of claim 1 wherein the muscle cells are cardiac muscle cells or skeletal muscle cells.

11. (Currently Amended) The process of claim 1, wherein said immunocompetent animalhuman is being treated with an immunosuppressant.

12-23. (Canceled)

24. (Currently Amended) A process for increasing the circulating levels of treating a hormone in the blood stream of an deficiency in an immunocompetent animalhuman which comprises

transforming muscle cells of said animalhuman *ex vivo* with an expression vector encoding a hormone; and

delivering said transformed muscle cells to said animalhuman by intramuscular injection in an amount sufficient to obtain expression of and increase the circulating level of said hormone in the bloodstream of said animalhuman for a period greater than about 30 days,

wherein said hormone undergoes secretion, diffusion or transport to the circulation upon expression *in vivo*.

25-26. (Canceled)

27. (Original) The process of claim 24 wherein the expression vector is a plasmid.
28. (Original) The process of claim 24 wherein the expression vector is a viral vector.
29. (Original) The process of claim 28 wherein the viral vector is a replication-defective adenoviral vector or a retroviral vector.
30. (Withdrawn) The process of claim 24 wherein the hormone is a cytokine, colony stimulating factor, nerve growth factor, insulin, glucagon, rennin, parathyroid hormone, growth hormone, or erythropoietin.
31. (Previously Presented) The process of claim 24 wherein the circulating level of the hormone is increased for a period of time greater than about 60 days.
32. (Previously Presented) The process of claim 24 wherein the circulating level of the hormone is increased for a period of time greater than about 90 days.
33. (Previously Presented) The process of claim 24 wherein the circulating level of the hormone is increased for a period of time greater than about 120 days.
34. (Previously Presented) The process of claim 24 wherein the circulating level of the hormone is increased for a period of time ranging from about 90 days to about 365 days.

35. (Original) The process of claim 24 wherein the muscle cells are cardiac muscle cells or skeletal muscle cells.

36. (Currently Amended) The process of claim 24, wherein said immunocompetent animalhuman is being treated with an immunosuppressant.

37. (Currently Amended) The process of claim 1, wherein the immunocompetent animalhuman is an adult immunocompetent animal.

38. (Withdrawn) The process of claim 5, wherein the hormone is a cytokine.

39. (Withdrawn) The process of claim 5, wherein the hormone is a colony stimulating factor.

40. (Previously Presented) The process of claim 5, wherein the hormone is a nerve growth factor.

41. (Withdrawn) The process of claim 5, wherein the hormone is insulin.

42. (Withdrawn) The process of claim 5, wherein the hormone is glucagon.

43. (Withdrawn) The process of claim 5, wherein the hormone is rennin.

44. (Withdrawn) The process of claim 5, wherein the hormone is parathyroid hormone.

45. (Withdrawn) The method of claim 30, wherein the hormone is a cytokine.

46. (Withdrawn) The method of claim 30, wherein the hormone is a colony stimulating factor.

47. (Withdrawn) The method of claim 30, wherein the hormone is a nerve growth factor.

48. (Withdrawn) The method of claim 30, wherein the hormone is insulin.
49. (Withdrawn) The method of claim 30, wherein the hormone is glucagon.
50. (Withdrawn) The method of claim 30, wherein the hormone is rennin.
51. (Withdrawn) The method of claim 30, wherein the hormone is parathyroid hormone.